

WHAT IS CLAIMED IS:

1. Planar antenna comprising
planar metal-plated, at least on one side, dielectric waveguide, to the side
walls of which two metal waveguides are adjoining that are connected with the
planar waveguide via periodical array of slots, wherein array period comprises two
slots shifted or inclined with respect to each other, and radiating elements having
two symmetry planes are placed in the nodes of a rhombic mesh on the surface of
the planar waveguide.

2. Device on claim 1 in which the planar waveguide has a form of a
rhomb.

3. Device on claim 1 in which the metal waveguides have rectangular
cross-section.

4. Device on claim 3 in which the metal waveguides are contacting with
the planar one by its wide sides.

5. Device on claim 3 in which the metal waveguides are contacting with
planar one by its narrow sides.

6. Device on claim 1 in which the plane waveguide is metal-plated on
two sides and the radiating elements are implemented in the form of square or
round holes in one of metallizations.

7. Device on claim 1 in which the plane waveguide is metal-plated on
one side, and the radiating elements are implemented as metallizations having a
square or round form.